Matthew Smith

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Education

University of Maryland, Baltimore County — Baltimore, MD
Bachelor of Science, Computer Science, GPA: 3.779, Magna Cum Laude — *Graduated May 2024*

Experience

Information Technology Assistant Intern — Sep. 2019 – May 2020
Loch Raven High School — *Towson, MD*

- Within a team environment, repaired and maintained 200+ laptops, reducing downtime.
- Reimaged and managed student laptops via cloud software tools.
- Assisted in setting up and maintaining school technology, ensuring smooth daily operations for classrooms.

Baltimore County Information Technology Intern — June 2019 – Aug. 2019
Baltimore County Public Schools — *Towson, MD*

- Reformatted and repaired over 1,500 school-distributed laptops, delivering device availability for students.
- Disassembled and replaced faulty hardware components, ensuring rapid device turnaround.
- Optimized the reformatting workflow, consistently exceeding daily quotas for later laptop deployment.

Projects

Coin Calendar | *React.js, Node.js (Express), MySQL* — Spring 2024

- Directed the development of an event calendar and budgeting web application, integrating a React.js frontend with an Express.js server backend and a MySQL database.
- Implemented key user features including a welcome email and a 'Forgot Password' option, while utilizing database indices to efficiently store user inputs and display personalized events on the calendar.

CRUD Application | *React.js, Python (Flask), MySQL* — Spring 2024

- Designed and developed a comprehensive CRUD application for managing a sample database encompassing students, classes, teachers, and student enrollments.
- Structured the database with distinct entity tables to facilitate seamless navigation, allowing users to efficiently edit and delete records, enhancing overall user control and experience.

Image Seam Carver | *C++* — Fall 2023

- Created an application that performs content-aware image resizing (seam carving), enabling the generation of smaller images while preserving essential visual features from the original.
- Utilized dynamic programming techniques to calculate the image energy function, leveraging the Eigen and CImg libraries to optimize performance and enhance functionality.

Linux Kernel Modifications | *C* — Spring 2023

- Engineered two Linux Kernel modules and a Bash replica capable of forking processes, displaying CPU information, and executing commands.
- Integrated thread locking mechanisms to manage parallel processes within a Binary Search Tree, ensuring efficient and synchronized execution of a process tree.

Self-Balancing Binary Search Tree | *C++* — Spring 2022

- Constructed a self-balancing tree that rebalances upon data insertion to maintain optimal performance.
- Implemented recursive methods for comprehensive tree operations, including memory management, node removal, and complete traversal of the tree.

File Interpretation and Manipulation | *Java* — Spring 2022

- Built an application that reads text files, processes the words by removing invalid characters, and outputs requested data into separate text files.
- Leveraged binary search trees and Java's built-in hash map to efficiently store the words in a structured format.

Technical Skills

Languages: Java, Python, C, C++, JavaScript, HTML, CSS, SQL, R, Racket, Intel x86 Assembly
Frameworks: React.js, Express.js, Flask, Tailwind, Django
Developer Tools: Git, Github, VIM, Tmux, Linux, VSCode, Visual Studio, PyCharm, Eclipse, IntelliJ
Relevant Coursework: Data Structures, Algorithms, Databases, Operating Systems, Computer Graphics